

KAZAKHSTAN

Reverse Mortgage Feasibility Assessment

May 25, 2002

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EXECUTIVE SUMMARY

A. Project

At the request of the USAID/Almaty Mission, Rebecca Richards-Webb and Chris Barltrop of E&E/MT Washington visited Almaty between April 15 and April 27, 2002 to analyze the feasibility of introducing reverse mortgages in Kazakhstan. The Mission's request for the evaluation stemmed from a desire to meet Strategic Objectives in two areas: economic reform and poverty reduction. Laura Vecvagare¹, a World Bank consultant, joined the USAID team. USAID thanks the World Bank for this active collaboration and constructive support.

The reverse mortgage (RM) represents a variant on the conventional mortgage instrument and development of this product would broaden the existing mortgage market. The RM is designed to pay the borrower monthly loan disbursements over the homeowner's remaining life, under the expectation that the proceeds from the sale of the home, upon death or relocation, will repay the outstanding loan.

The RM evaluation was limited to city of Almaty. The housing stock in Almaty was privatized through transfer of title from the State to the occupant in a program that lasted from 1990 to 1995. Many of the recipients of the title to this housing stock do not have sufficient income to properly maintain the property, resulting in deterioration of the housing stock and a decline in their quality of life. The transfer of property leaves many elderly residents asset rich, but cash poor. A reverse mortgage product allows monetization of pensioners' primary asset. This assessment will help the Mission to determine:

1. The potential market of elderly, low-income homeowners who could benefit from extracting some of the equity in their residences to cover current living and maintenance expenses.
2. The financial viability of a reverse mortgage product, taking into account apartment values, living and maintenance expenses, transaction expenses, taxes, interest rates and actuarial considerations.
3. Potential legal impediments that might need to be resolved, including issues relating to the transfer of property rights and inheritance.
4. Robustness of the valuation system used to appraise property in Kazakhstan.
5. Consumer protection needs and the transaction structures that would best protect lender and borrower against abuse.
6. Market interest in the development of a reverse mortgage product in Kazakhstan.

The feasibility analysis was conducted in collaboration with The Pragma Corporation (Pragma), currently the lead contractor on the USAID Financial Protection Initiative (FPI) project. The Pragma staff provided invaluable insight and statistical analysis, and assisted in the interviews. Discussions were held with key participants in the banking, insurance, pension, real estate and conventional mortgage markets as well as with local government leaders.

¹ Ms. Vecvagare is a consultant with the Infrastructure Sector Unit, Europe and Central Asia Region of the World Bank. She has been actively involved with the establishment of a reverse mortgage system in Latvia, and is familiar with similar activities in Russia and other countries.

The Report is divided into seven sections. Sections I-II of this assessment develops a general understanding of the reverse mortgage product and a comparative analysis of markets now offering reverse mortgages. Section III, contains lessons learned from other markets and summarizes the economic framework in which a RM product can be an effective product. Sections IV-V discusses the local market conditions within the framework established in Section III. Section VI provides the reader with Conclusions and Summary. And, Section VII, the Appendices, provides the supporting documentation for the Conclusions.

B. Findings

The team recommends launching a Reverse Mortgage (RM) product targeted to benefit the elderly once the following market conditions exist:

1. Long term, US Dollar, mortgage lending rates in Kazakhstan drop below 10%.
2. Legal impediments stemming from the inheritance laws are eliminated. Current laws, designed to protect the inheritance rights of heirs, prevent lenders from immediately selling the collateral (property) from the RM to satisfy the accumulated debt of the elder homeowner.

Both of these issues are critical to the success of a reverse mortgage project. Eliminating legal impediments to RMs also fosters development of the conventional mortgage market. This and other legal issues are foci within the existing FPI project being managed by Pragma.

The team's recommendations are based on the following findings. These findings are detailed in the body of the Feasibility Assessment and supporting analyses are noted in the brackets.

1. A conventional mortgage market exists and is growing exponentially. [Page 1]
2. The potential market for reverse mortgages in Almaty is estimated between 45,000 and 62,000 households, with an additional 7,000 to 12,000 households in Astana. Assuming an average market value of a one-bedroom apartment of \$7,000, then the total value of eligible residential property available to support the reverse mortgage market in these two cities could be up \$518 million. [Appendix D]
3. The financial models show that in order for a wide age dispersion of pensioners to receive a 50% increase in income above the current monthly level of \$28, long-term mortgage rates must be no higher than 9%. Such a rate should be possible with continued economic stability, deepening of the mortgage market, continued real estate appreciation and increased long-term funding for the mortgage market once mortgage backed securities are introduced. [Section V.H, Appendix B]
4. Adequate consumer protection is possible if the *actuarial risk* is extracted from the private sector intermediaries. This is the risk that the RM borrower lives past his/her actuarial age norm and the full amount of the reverse mortgage loan will not be recovered from the sale of the property because payments to the borrower continue for his/her remaining life regardless of whether the full market value of the home has been expended. [Section V.D, G Appendix B, E]
5. The necessary intermediaries for this mortgage product (borrowers, lenders, issuers of insurance, distributors of the reverse mortgage payments, sources of long term funds, real estate appraisers and property managers) already exist in Kazakhstan. [Section V.D, Appendix E]
6. Local government interest was high, providing adequate consumer protection could be built into the RM product design, since the product will help alleviate the pressing social

challenge of inadequate pension disbursements. [Section IV H]

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ACRONYMS

Fannie Mae	The Federal National Mortgage Association
FHA	Federal Housing Authority of the United States
FPA	USAID’s Financial Protection Initiative
GOK	Government of Kazakhstan
KMC	Kazakh Mortgage Corporation
LTV	Loan to Value – the size of the loan compared to the value of the property.
MBS	Mortgage Backed Securities
MOF	Ministry of Finance
NBRK	National Bank of the Republic of Kazakhstan (the Central Bank)
Pragma	The Pragma Corporation, Inc.
RM	Reverse Mortgage
SRO	Self-Regulating Organization
USAID	United States Agency for International Development
WB	World Bank

I. PURPOSE

The purpose of this Assessment was to determine the market acceptability and viability of reverse mortgages (RMs) in Kazakhstan. This effort is in accordance with the Central Asian Republic (CAR) USAID Mission's 2001-2005 Strategy for improving the financial sector.

This assessment assists the Mission in determining:

1. The potential market of elderly, low-income homeowners who could benefit from extracting equity in their residences to cover current living and maintenance expenses.
2. The financial viability of a reverse mortgage product, taking into account apartment values, living and maintenance expenses, transaction expenses, taxes, interest rates and actuarial considerations.
3. Potential legal impediments that might need to be resolved, including issues relating to the transfer of property rights and inheritance.
4. Robustness of the valuation system used to appraise property in Kazakhstan.
5. Consumer protection needs and the transaction structures that would best protect lender and borrower against abuse.
6. Market interest in the development of a reverse mortgage product in Kazakhstan.

II. BACKGROUND

A. Concept

The 2001-2005 strategy for the CAR under IR 1.3.2 suggested developing a new mortgage product, the reverse mortgage (RM), which would augment the income of elderly pensioners who own a home. Besides providing a benefit to cash poor pensioners, the RM could also be long term financial instrument in which the pension funds and life insurance companies could invest. The cash flow characteristics of these instruments complement the investment needs of the pension funds and life insurance companies.

The RM represents a variant on the conventional mortgage instrument and development of this product would broaden the existing mortgage market. In the past 20 months, the mortgage market in Kazakhstan has grown from virtually zero to \$18 million. This rapid growth demonstrates the successful introduction of conventional mortgages in Kazakhstan and lays the foundation for expansion of mortgage products, potentially to include the RM. USAID/Almaty requested an evaluation team to assess the viability of developing RM as an alternative mortgage instrument in the Kazakh market. The team consisted of Rebecca Richards-Webb and Chris Barltrop of E&E/MT Washington and Laura Vecvagare² of the World Bank.

B. Current Housing Situation: the pensioners plight

Approximately 95% of the Kazakh housing stock has been privatized by conveying ownership to the occupants. The privatization process started in 1990 and was completed by 1995. This level of privatization resulted in one of the highest levels of home ownership

² Ms. Vecvagare is a consultant with the Infrastructure Sector Unit, Europe and Central Asia Region of the World Bank. She has been actively involved with the establishment of a reverse mortgage system in Latvia, and is familiar with similar activities in Russia and other countries.

throughout the world. Home ownership coincided with economic restructuring and the elimination of many government subsidies and entitlements, the loss of cash savings and the depreciation in value of the individual's pension payments.³ As a result, many of the elderly homeowners have not had sufficient income to properly maintain their property, resulting in deterioration in the housing stock. Homeowners without a stable source of adequate income, particularly pensioners, have barely been able to maintain a subsistence life style.

The need for some mechanism to allow homeowners to unlock the home equity by extracting value from their primary asset during their remaining life has been evident. The most commonly used method in this market of turning capital into cash includes low-income households selling an existing home and purchasing a smaller residence or one in a less favorable neighborhood. Many pensioners have exercised this option. However, homeowners cannot trade down to less than the basic one room apartment and still retain a home, and many have been reluctant to leave their long-term homes. The need for some other mechanism of extracting value from a residence remains.

C. Reverse Mortgage: turning equity into cash

Reverse mortgages generally require that the mortgagee (homeowner) own a home outright. A reverse mortgage (RM) is a loan collateralized by the value of the home. The RM is designed to pay the borrower monthly loan disbursements over the homeowner's remaining life, under the expectation that the proceeds from the sale of the home upon death or relocation will repay the outstanding loan. Loan disbursements and accumulated interest build up during the remaining occupation of the home and do not have to be repaid for as long as the pensioner continues to reside in his/her home. A periodic disbursement level is set based on the appraised value of the home, the actuarial life expectancy of the borrower, and the prevailing long-term interest rate.

The need for reverse mortgages and like transactions has been previously examined in Kazakhstan. The first initiative involved the state owned housing construction bank, Zhilstroy Bank.⁴ The concept was to enable the elderly homeowner to swap the value of the home for elderly hospice care. At the time of the homeowner's death, heirs would have an opportunity to recover the residence. Implementation never began due to privatization of Zhilstroy and unfavorable market interest rate levels.

The second initiative, a 1999 amendment to the Commercial Code, introduced the *Ryenta system*⁵ that allows interested parties to sell their property to a caregiver in return for continued residency and elder care⁶. The law was structured such that the elderly homeowner could recover his/her property if the caregiver failed to honor his/her commitment to provide elder care. However, the commitment of the caregiver was left unchecked and city officials have noted that there have been at least seventeen known cases in Almaty where the homeowner is thought to have died prematurely so that the caregiver could secure unrestricted control of the property.

The analysis of the potential market for RMs was limited to city of Almaty. It has a stable real estate market and a significant elderly population. Residential property appreciation has

³ The current minimum level is understood to be the equivalent of \$28 per month.

⁴ Source: Mayko O. Sagandikova, President of the Kazakhstan Mortgage Company and former executive of the Zhilstroy Bank.

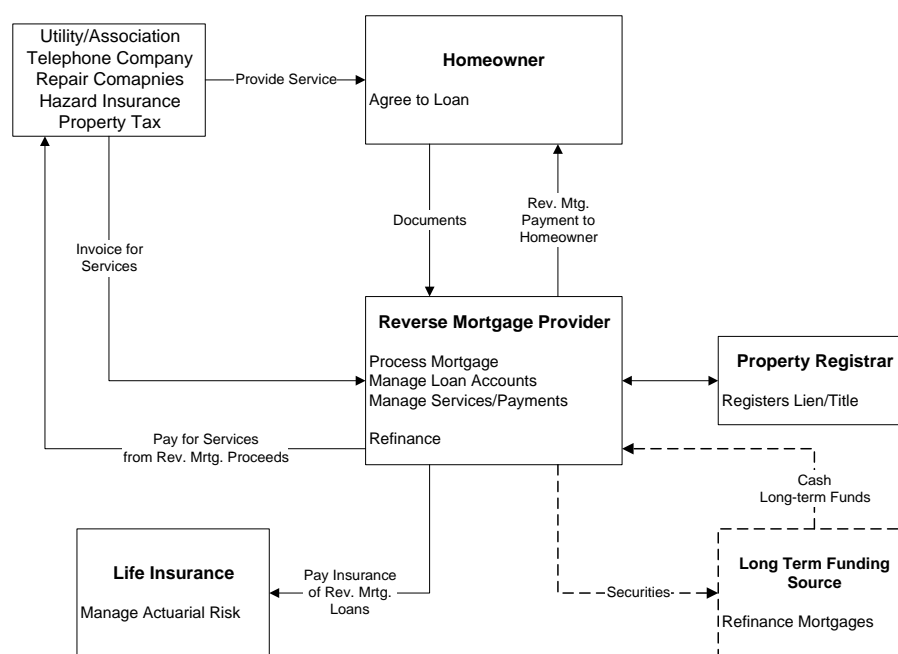
⁵ Kazak banks were not interested in participating in the *Ryenta system*, since they are, by law, not allowed to own real estate.

⁶ The newspapers contain numerous advertisements offering care to elders in exchange for rights to the apartment upon the elders' death or departure from the home.

averaged 5% per year over the last two years since residential mortgages were introduced. Census data collected during the assessment by the Pragma team revealed that 90-95% of elderly persons living alone or with one other elderly person were in owner occupied houses or apartments. The results of this analysis are likely to be similar for any Kazakh metropolitan area where there is a stable or improving real estate market (Almaty, Astana and Atirau) but be less applicable in areas with declining or volatile real estate values.

The stakeholders in a reverse mortgage can include the homeowner, reverse mortgage provider, financial manager, life insurance company and service provider (if difference from the RM provider). The following provides a simplified schematic of the participants and their possible roles in structuring a RM market. A more detailed schematic of participants and their roles is detailed in Appendix E.

Reverse Mortgage Setup and Outflow



The roles and responsibilities of the stakeholders would be:

Homeowner – signs a loan agreement and security agreement (pledge or mortgage) that will convey ownership to the lender of the property at maturity of the loan. The home is collateral for the loan.

RM Provider – might be a single institution or multiple institutions with complimentary roles, including mortgage originator, specialized mortgage lender, real estate brokerage firm, life insurance company, municipal lending authority, or pension fund. Functions include originating the RM, registering the lien/title in the name of the lender, acting as financial manager to disburse funds and liquidate the property to pay off the loan at maturity, and acting as a servicing company to provide for maintenance, insurance, and utilities.

Insurance / Guarantee Institution – an entity undertaking actuarial risk, which is defined as the risk that the RM borrower lives past his actuarial age norm and the full amount of the reverse mortgage loan will not be recovered because the payments to the borrower continue regardless of how long he/she lives. There will also need to be a mechanism for protecting

the borrower if the lender goes bankrupt. An insurance company or a government entity could assume these risks. Research has shown that a government entity garners more trust in this role with potential borrowers.

D. Reverse Mortgages as Used in Other Countries

There is significant experience with reverse mortgages in developed countries. However, most of these programs have been in operation for a relatively short period of time. Reverse mortgage programs, on an institutional basis, were first introduced in the early sixties in the US by municipalities to enable elderly people in their communities to carry out home improvements and to pay property taxes. These loans were provided at a zero interest rate. In 1984 a specialized reverse mortgage institution was established in Canada – the Canada Housing Investment Plan. The Federal Housing Administration (FHA) in US followed with a reverse mortgage product in 1986 and a government- sponsored entity, the Federal National Mortgage Association (Fannie Mae) joined in 1990. Several private US financial institutions also tried to introduce this product, but only one of them has been successful, Financial Freedom. Similar programs have been introduced in the UK, Russia and Australia and the Government of Latvia approved implementation of such a program in co-operation with the World Bank in early 2002.

While each program has unique characteristics, (for details see Appendix A), the key issues in each program are:

- Who assumes loan maturity risk?⁷
- Who assumes the risk that the lender may fail?

These are very important to the lender, but even more important to the borrower.

All programs, excluding the Russian program, are based on a lien or mortgage. The loan will be paid from the sale of the property up to its realizable value upon the occupant's death or departure. The borrower or his/her heirs receive any residual amount from the sale of the property. Loan recovery is limited to the realizable value of the mortgaged property with no recourse to the lender for any shortfall. The *loan maturity risk* is that the proceeds from the home sale may not cover the accumulated loan amount. This risk is managed (by the lender) in purely private programs by lending at excessively low loan to value (LTV) ratios. A third party guarantee or some type of insurance will protect the lender against this risk and afford the borrower a higher LTV. This guarantee or insurance component of the RM programs has developed in most countries and the government frequently provides this protection for a fee. In Russia the municipal agency for reverse mortgages self-insures against such risk by taking over the title of the property. The excesses on some properties cover losses on others.

The elderly are most concerned with two issues – 1) that they will not be forced out of their home, and 2) that they will reliably receive the periodic payments. The governments' role as guarantor or insurer addresses both of these concerns. In the case of FHA and Fannie Mae programs, the lender is given certainty of repayment of the full loan amount and the borrower is assured to receive scheduled monthly payments. The two institutions assume the *default risk* so that the borrower will receive his/her payments as agreed.

The following table shows comparative data for RM programs in both developed and transitional economies. A more detailed discussion of the differences is located in Appendix

⁷ That the loan amount would exceed the property value if the actual loan term is longer than expected and/or the value of the property does not develop as expected.

A.

Country	Provided by	Basis	Public guarantee	Funding source	Payout terms to elderly
USA – municipal	Municipalities	Lien	Full	Municipal budget	Based on market value of the property, interest rates and age
USA – FHA	FHA through commercial banks	Lien	Full	Government budget	Based on market value of the property, interest rates and age
USA – Fannie Mae	Fannie Mae through commercial banks	Line	Full (implicitly)	Fannie Mae (recently – reverse mortgage bonds)	“
USA – private	Private financial institution	Lien	No	Own funds	“
CANADA	Specialized reverse mortgage institution	Lien	No	Own funds	“
RUSSIA	Municipal agency	Transfer of title	Full by municipality of Moscow	Municipal budget – 13% and own funds	Based on the type of property (no evaluation)
LATVIA	Private commercial banks with government guarantee	Lien	Partial	Commercial banks from own funds	Based on market value of the property, interest rates and age

III. LESSONS LEARNED FROM OTHER REVERSE MORTGAGE MARKETS

A. Lessons Learned

1. Public Trust

Trust and security to the elderly borrowers are the most important parameters of the RM instrument; security that the person will not be forced out of the home and that the borrower will receive the promised payments under any circumstances. To encourage trust among the elderly population, most of the above mentioned programs have government interventions where some or all of the risks are assumed by the central or municipal government. In the case of FHA and Fannie Mae, both loan maturity risk and borrowers' repayment risk are assumed by these entities.⁸ In municipal programs such as that in Russia, the municipality of Moscow assumes all risks. In other programs such guarantees have been provided implicitly by offering these programs through government entities.

One of the cornerstones to trust and security of this program is the presence of basic consumer protection rights. In order to ensure that the borrower understands the details and characteristics of the transaction it is very important to educate the consumer and his/her heirs (if applicable). The programs in the US have established criteria that ensure objective counseling. In the US, the consumer must discuss the risks and rewards with a FHA approved counselor. This interaction with the counselor is mandatory, and it is a pre-qualifying requirement for obtaining a RM. A key feature of this counseling is that the counselor has to explain not only reverse mortgage but other options as well. The borrowers' mandatory counseling is provided for free, funded by FHA's budget.

2. Public Awareness through Marketing

Marketing has proven to be very important for broader market penetration in RM programs.

⁸ See Appendix A for a detailed discussion of the risks.

The lack of marketing was cited as the reason the US program has not been more successful and one of the causes for discontinuing the Australian program.⁹ Understanding the product is a paramount need for the elderly. This makes the borrower's decision process lengthy and, therefore, costly. Very often lenders do not have enough incentives to carry out marketing activities since other products tend to be less labor intensive and therefore more profitable, at least in the short term.

3. Incorporation of Lessons Learned

The program features and concerns above are particularly important in transition economies due to the absence of public trust in the private sector, and to a lesser extent, in the government. This lack of trust, coupled with the absence of a credit culture in most of the transitional economies mandates that new RM projects incorporate the lessons learned from previous programs.

After studying the other RM markets, the assessment team developed a list of criterion for launching a viable RM product in Kazakhstan. The framework below discusses the preconditions and the systems needed for a successful pilot project in Kazakhstan, the impediments that currently exist, possible solutions to these impediments, and recommendations for the next steps that USAID Mission staff must make before implementing a RM product.

B. Framework: Preconditions and Systems Needed for a Viable Reverse Mortgage Market

In order for reverse mortgages to be viable, certain conditions and systems are needed. These include:

- 1) A high percentage of home ownership and an established mortgage market. These basic requirements are necessary to make RMs viable for several reasons:
 - a) The RM product is contingent upon outright ownership of residential property. The larger the population of home owners, the larger the potential demand for the product among the elderly homeowners;
 - b) An established mortgage loan culture makes it easier for the elder to understand the benefits of the product and for the lender to fairly evaluate the risks.
- 2) An effective real estate valuation system:
 - a) RM lenders must rely on a credible real estate valuation system to reliably determine the amount that can be lent without resorting to excessively low LTVs.
 - b) Borrowers must have confidence that they are receiving fair value for their property.
- 3) Adequate demand for RMs and interest of potential suppliers:
 - a) Demand depends on the size of the population of elderly homeowners and among those, homeowners that have limited income.
 - b) Supply depends on willing market participants and adequate long term funding availability.
- 4) Adequate demographic and actuarial data:
 - a) Reliable demographic data to identify the target market and potential borrower mix.

⁹ Recently there have been discussions about resuming the reverse mortgage program in Australia.

- b) Actuarial data to reliably determine the monthly payments that a given property will support based on the life expectancy of the borrower.
- 5) Stable, long-term interest rates:
 - a) Since interest is accumulated and compounded over the life of the loan, RMs are extremely interest rate sensitive, with a small change in the interest rate having a major impact on the monthly amount that can be disbursed.
 - b) Anticipated instability in interest rates will cause lenders to err on the side of caution by widening the gap between lending and funding rates.
- 6) A legal infrastructure that adequately and predictably balances borrower and lender rights:
 - a) Borrowers must have legal protection from lenders that may benefit from taking control of the borrower's home prematurely.
 - b) Lenders must have the legal right to liquidate pledged property quickly to ensure prompt repayment of the loan at termination of the contract.
 - c) Lenders must have the right to file a lien against the property and collect against that lien.
- 7) Direct or indirect endorsement of reverse mortgages by government:
 - a) Other markets that support the RM product have some type of government intervention, either by direct subsidies or indirect support of the product.
 - b) Involvement by the government builds trust with borrower and lender.
 - c) Municipal governments have participated directly in providing RMs to their elder population.
- 8) The distribution and administrative mechanisms that will support RMs:
 - a) Distribution of the loan proceeds to the elderly must be in place. In some countries, this function is performed by the private sector. In other countries this function is the responsibility of government agencies.

IV. GENERAL LOCAL CONDITIONS

A. Homeownership

According to 1999 census data, private homeownership in Kazakhstan is over 95%. The residential mortgage market has grown from zero to \$18 million in the last two years.¹⁰ One-tenth of the population of Kazakhstan lives in Almaty. 1999 census data showed 385,758 households in Almaty. The census data also showed that 90-95% of elderly persons living alone or with one other elderly person were in owner occupied houses or apartments. According to the city of Almaty Social Service Department, there are 160,000 people in Almaty collecting pensions. Both the City Social Service Department as well as the Mayor's office are interested in partnering with USAID to develop a RM product.

B. Real Estate Valuation System

A cornerstone of an active real estate market is a system of real estate valuation. With the

¹⁰ Pragma legal advisor, Steven Moody.

high level of home ownership and the growing volume of mortgages, a real estate valuation system consistent with international best practices is emerging in Kazakhstan. Accurate valuations by impartial appraisers are essential to defining the value that can be extracted from a home through a reverse mortgage.

Initial interest in setting up a professional appraisal process in Kazakhstan surfaced in 1994 and the appraisal process formally began in 1997 with the establishment of a government-sponsored¹¹ Institute for Appraisers. An Appraisal Law was passed in November 2000. This established the oversight mechanism and criteria for Appraisers. The Ministry of Justice issues appraisal licenses, and has set minimum standards for certified appraisers. Individual appraisal reports are spot checked by a self-regulating organization (SRO) to ensure consistency with national standards, and licenses are suspended by the MOF (upon suggestion of the SRO) in case significant problems are found. There are now 35 licensed real estate appraisers and 75 companies engaged in some form of appraisal activity

The format of the appraisals is based on international appraisal standards, with commercial standards and residential standards. Residential appraisals use a weighting system to reflect market differences in comparable sales, with key weighting factors being location, internal and external condition, floor, building construction and age. The residential appraisal process appears more mathematically driven, leaving some room for judgment; however this market-adopted approach is structured and reduces the probability of subjectivity on the part of the independent appraiser. The average value of a one-bedroom apartment in Almaty was indicated to be \$7,000.

Appraisal fees have an indexed fee structure based on the dwelling size and average hours expended. For a two room apartment, the appraisal fee using the “basic wage” index is approximately 823 tenge, or about \$43. Most mortgage banks have their own appraisers to verify independent appraisals. TuranAlemBank’s (BTA) mortgage department verifies appraised value with its own staff appraisals and independent appraisers’ values have been generally confirmed.

C. Demand for the RM Market

The potential market for reverse mortgages in Almaty is estimated at between 45,000 and 62,000 households¹², out of a total number of approximately 385,800. This reflects a significant potential demand for reverse mortgages. As noted previously, RMs can exist only within an established mortgage market that previously has been introduced to the mortgage concept and culture. The funds flows generated by this product could provide significant financial relief to elderly low-income homeowners, given the right loan structure.

D. Interest of Potential Suppliers of RMs

Suppliers of RMs in Kazakhstan could include banks, private or public pension funds, life insurance companies, the Kazakh Mortgage Corporation (KMC), the city of Almaty (City), or other specialized mortgage lenders. If there are no legal restrictions for these intermediaries make RMs, these potential RM originators must determine the optimal loan structure to make the RMs financially viable. That is dependent upon several variables:

¹¹ Through the Ministry of Education.

¹² Please note that these are stocks rather than flows. The stock is likely to stay constant or shrink in the coming 5 years because of small additions caused by small retirement-aged cohort sizes (as the generation currently retiring was born between 1939 and 1944).

- Levels of interest rates – lower interest rates benefit a wider age and gender distribution of seniors
- Actuarial life of the borrower (Maturity of the loan) – if the borrower lives past the actuarial norm used to calculate the loan, and payments exceed the value of the property, the lender is at risk for the deficit. This actuarial risk can be off-loaded to an insurance company or possibly the City or KMC.
- Future RE value – with the growth of the mortgage lending market, property in Almaty has appreciated about 10% over the last two years.
- Costs of administering the RM – could be reduced for lenders if distributions are off-loaded to an existing entity like the postal service or the existing pension distribution centers.

The evaluation team used a quantitative simulation model, the viability analysis model¹³, incorporating each of the variables noted above to project the financial viability of RMs under different financial scenarios. These simulation exercises are detailed further in Section V.H. and Appendix B, *Financial Analysis Models*.

Interviews with potential suppliers, disclosed a keen interest in development of the RM product. The list of potential suppliers is summarized below – specific concerns of each are discussed in more detail in the following section, *Scope of RM Project*.

Banks – may be interested in this market, given the fees gained for administering, the interest rate levels, potential tax advantages¹⁴, and increasing appreciation in the Almaty market. However, banks now choose to operate mortgage lending out of special purpose entities or subsidiaries that will most likely be the vehicles used to originate RMs. Mortgage banks, which are subsidiaries of commercial banks, are actively involved in mortgage lending and could be a potential supplier of these RMs.

Pension Funds – Kazakh pension funds have accumulated substantial long-term funds but have inadequate investment grade investment opportunities. They are required to hold 40% of their portfolio in government bonds, yet the government is not issuing enough bonds, resulting in negative real term interest rates. Kazakh pension funds can legally hold up to 5% of their assets in mortgage backed bonds, so pensions will be interested up to that 5% only if clear title to the underlying mortgage assets is guaranteed, in case the issuer defaults. To enhance the demand for RMs, a partial or full Government of Kazakhstan (GOK) backing for mortgage bonds, including acceptance of RM loans (or RM backed bonds) as an alternative to government bonds, could be promoted. The long-term nature of these loans matches the long-term nature of the pension funds' liabilities.

Insurance Companies – Non-life insurance companies would participate through property and hazard insurance. Such coverage is available and already required for standard mortgages. The actuarial risk may spawn a viable product for life insurance companies, using an industry standard annuity product. Also, if the local life insurance company were permitted to invest long term funds in real-estate, then there might be interest in actually funding RMs in conjunction with assuming the actuarial risk.

Kazakhstan Mortgage Corp (KMC) – is interested in developing this market. The Director

¹³ The model allows for the assumptions to be varied for testing sensitivity to change.

¹⁴ At present, the banks would probably have to show the accrued interest as current period taxable income, even though this interest is only received on termination of the reverse mortgage transaction. Unless corrected, this tax impact is likely to be a disincentive for banks to participate in RMs.

of the KMC developed a strategy paper on these products in 1996, but her recommendations were never acted upon due to high interest rates and the privatization of the sponsoring entity. Ideally, since KMC is wholly owned by the National Bank of the Republic of Kazakhstan (NBRK), its involvement would also assure a higher level of trust from the potential borrowers.

City of Almaty¹⁵ – The Mayor’s office and the Social Services Department are interested in participating in this program. During our visit, the Deputy Mayor wanted USAID to prepare a business plan and workplan as to how the City could participate with USAID in launching this product.

E. Demographic and Actuarial Data

Demographic and mortality data is reliable enough to determine the likely age, gender and life expectancy of pensioners. This information is essential to developing a sound RM loan structure and terms. Appendix D explains the actuarial data sources and strategy used in identifying the potential volume of demand for RMs.

F. Predictable Interest Rates

Conventional mortgage interest rates have been dropping, and are down to between 14-19%, with maturities up to 10 years at the higher rates. With short term rates (3-6 months Treasuries) below 5%, mortgage interest rates remain high. As the mortgage market matures and the legal impediments to collection diminish, lenders should become more confident in the mortgage product, its collectability and financial viability. Rates should continue to decline, assuming continued macroeconomic stability and a stable tenge.

The compounding effect of accrued interest in the structure of reverse mortgages, coupled with the low average market values of property in Kazakhstan, lowers the payments distributed to the borrower. The lower the interest rates, the higher the reverse mortgage loan disbursements. The affect of different interest rate levels are discussed further in the *Scope of Potential Reverse Mortgage Project* and Appendix B

G. Legal Infrastructure

1. Consumer Protection for Borrowers through RMs

The general population is acutely aware of the experiences with reverse mortgages in Russia. There has been extensive reporting in Kazakhstan of instances in Russia where unscrupulous lenders were keen to obtain title to their apartments, by whatever means. The press has reported that many seniors died under suspicious circumstances and lenders benefited from the appreciated value of Moscow property. This type of publicity will have a negative impact on public acceptance of a reverse mortgage program in Kazakhstan unless consumer protection is very clearly assured through the RM transaction structure and education of the borrowers is included as a pre-condition to the loan.

2. Legal Impediments in the Structure of RMs in Kazakhstan;

- 1) There is no clear definition of who is responsible for taking over the payments to the pensioner if the lender ceases to exist either due to bankruptcy or any other reason.

¹⁵ Source: Mr. Kozy-Korpesh E. Djanburchin, Deputy Mayor of Almaty City. The City Administration would welcome cooperation to develop solutions to the elder social obligations. According to Deputy Mayor Djanburchin, this issue is politically sensitive and difficult to resolve.

- 2) Inheritance laws require a six months probate period after death before liquidation of the asset can start, a process that may take a further six months in court. During that time the holder of the RM could not sell the property and recover the loan amount. This extended time frame is a disincentive for RM holders that must fully recover the loan amount.
- 3) Tax laws: Banks would probably have to accrue the interest being capitalized on reverse mortgages and pay interest on that accrued interest, even though they would not expect to receive any interest until the end of the loan years later.

Securities that are backed by the cash flow of conventional mortgages, mortgage backed securities (MBS), are afforded no tax forbearance either. Reverse mortgages can also be securitized and sold as mortgage-backed securities, with the added benefit of satisfying a social obligation to one of the lowest income groups. Tax forbearance of mortgage backed products would incite the RM provider to expand lending for this type of mortgage.

H. Direct or Indirect Endorsement of RMs by the GOK

- CITY OF ALMATY: Mayor's office seemed interested in the product, particularly in forming a partnership with USAID to launch the development of this market. The Social Services department oversees pensioners' issues and is interested in this program. This department would be a source for educating the public of the risks and rewards for obtaining an RM.
- CENTRAL BANK- endorsed the development of this product with some concern over the negative publicity of these products in Russia.
- KMC- now wholly owned by the Central Bank. They are interested in developing this product.

I. The Distribution and Administrative Mechanisms that will Support RMs

- Preservation of property values – specialized private sector property management companies already exist since this function has been privatized. It would be within their business line to provide for upkeep of the property.
- Distribution of cash payments – Social Services already distributes pension payments through payment offices, so this same system could be used as a payment vehicle. If reliability is an issue, however, then the existing automated interbank payment system could be used to initiate e-payments through the savings bank or Kazpost (the Kazakh postal system that handles small payments as well as mail)
- Property valuation – A real-estate appraisal industry is fully functional.
- Real-estate sales – Continued growth in the mortgage market can increase liquidity.

V. SCOPE OF POTENTIAL RM PROJECT: EVALUATION FINDINGS

The team's analyses evaluated the criterion and the framework developed in Section IV to determine key factors affecting the financial viability of the RM product and whether current market conditions and existing systems indicate that the time is right to introduce in Kazakhstan such a product. Current market rates are too high and property values seem to be too low for a large population of elderly to benefit from this product. Also, current inheritance laws make the liquidation of the pledged home cumbersome and time consuming for the RM holder. However, these factors are not insurmountable and it appears that a

limited pilot project for RMs will be viable once interest rates drop and the inheritance issues are resolved.

The same criterion and framework was used to evaluate RM viability and to sketch a potential Scope of Work for a new RM project. This Scope of Work is framed by:

- 1) The level of home ownership and an established mortgage market;
- 2) A real estate valuation system;
- 3) Demand for RMs and interest of potential suppliers. The financial viability of a reverse mortgage product was assessed, specifically considering the open-ended maturity of this type of loan, rigor of actuarial data, importance of apartment values, living and maintenance expenses as a percent of current estimated income, transaction expenses, taxes, and interest rates;
- 4) Adequate demographic and actuarial data;
- 5) Predictable interest rate levels;
- 6) A legal infrastructure that balances borrower and lender rights;
- 7) Direct or indirect endorsement of reverse mortgages by government;
- 8) The distribution and administrative mechanisms that will support RMs.

Each of these criteria is reviewed in the following sections, leading to recommendations and suggested next steps for the Mission.

A. Home Ownership in an Established Mortgage Market

Almaty could be an excellent location for a pilot program for RMs, with one-tenth of the population of Kazakhstan, home ownership levels of over 85% in the City, an established mortgage market, 160,000 pensioners, and the municipal government's willingness to participate in this type of program.

B. A Real Estate Valuation System

In sum, the valuation of residential real estate in Almaty has a valuation process based on international and European standards and does not appear to represent an unreasonable source of risk to the development of this product. Technical assistance for appraisers under the FPI should be continued.

C. Demand for RMs

1. Demand

The Pragma Corporation team in cooperation with the Kazakhstan Actuarial Center provided an analysis of the potential population that would benefit from RMs based on the 1999 census data. The complete analysis is shown in Appendix D.

The potential volume of elderly, low-income residents who could benefit from turning their asset (home) into cash to supplement current living and maintenance expenses is from 45,000 to 62,000 households.

Using this data there appears to be a large potential market for these instruments. If the maximum potential of 62,000 Almaty households is reached then total portfolio value of

RMs could build to over \$400¹⁷ million in the next decade or so.

2. Survey Results

During the evaluation, a group of 17 pensioners were surveyed to determine their basic level of interest in this type of mortgage product. More than half confirmed that they would like to participate in such a program. Reservations of those surveyed included: 1) levels of interest rates, 2) distrust of private sector banks and to a lesser extent city and central government, 3) low monthly income from the RM due to the current high levels of interest rates and, 4) need to obtain fair appraisals. Pensioners were also concerned that if they gave up rights to their property, they wouldn't have money for a descent funeral. What was apparent during the interviews, and afterward, was the overwhelming need for educating the potential borrowers and designing equally informative marketing materials about the product.¹⁶

D. Interest of Potential Suppliers

Although representatives from private banks, mortgage brokerage firms, city of Almaty (City), the KMC, pension and insurance companies were all interviewed during the evaluation, and all showed enthusiasm and eagerness to participate in a pilot RM project, some intermediaries are better suited to specific roles than others.

Private banks may not be the ideal entity to hold RMs. Banks' lending practices are fundamentally contrary to relying primarily on the value of collateral to satisfy the debt as banks deal in cash. While their lending activity finances the purchase and or transit of goods and services, they lend cash and recover cash. Holdings of non-cash assets are primarily limited to seized collateral on defaulted loans.

A standard mortgage is based on credit extended by a bank that will only take title to the property if the borrower defaults on the loan and it much prefers being repaid from the borrower's cash flow.

In contrast, a reverse mortgage assumes that the holder of the RM will be repaid only through the proceeds of the sale of the property upon the termination of the contract, not from the borrower's income. The timing of repayment is a single event on an uncertain future date.

The role of banks may be better suited to originating reverse mortgages and selling the RMs to a non bank financial institutions (NBFIs) or government entity. These NBFIs (such as pension funds or life insurance companies) can better manage the property valuation risk within their portfolio, whereas the government entity is better positioned to take the actuarial risks and instill trust to the borrower. Reverse mortgages are not appealing loan products unless actuarial and future property value risks are reduced.

Non-banking financial institutions, including real estate agencies or mortgage brokers can also originate reverse mortgage loans and sell these to a credible government entity such as the Kazakhstan Mortgage Corporation (KMC). The KMC's purpose is to hold mortgage loans and possibly resell them as securities or whole loan packages. Thus, KMC can hold the RMs and possibly resell them (either as whole loans or bonds) to the life insurance companies or the pension funds. The newly developed Kazakhstan Agency for Mortgage

¹⁷ Actual cash available to borrowers would be significantly less, since a good part of the \$400 million would be accumulated interest. In a reverse mortgage, the borrower makes no interest payments – the accrued interest is added to the principal and is paid on liquidation of the securing real estate.

¹⁶ Senior Legal Advisor of Pragma, Paul Backer, accompanied Ms. Vecvagare during the survey. He noted that two participants called the day after the survey and were concerned that by participating in the survey, they committed to handing over their home.

Insurance (KAMI) or possibly KBS-Garant, a private mortgage insurance company, may too, be able to absorb the actuarial risk.

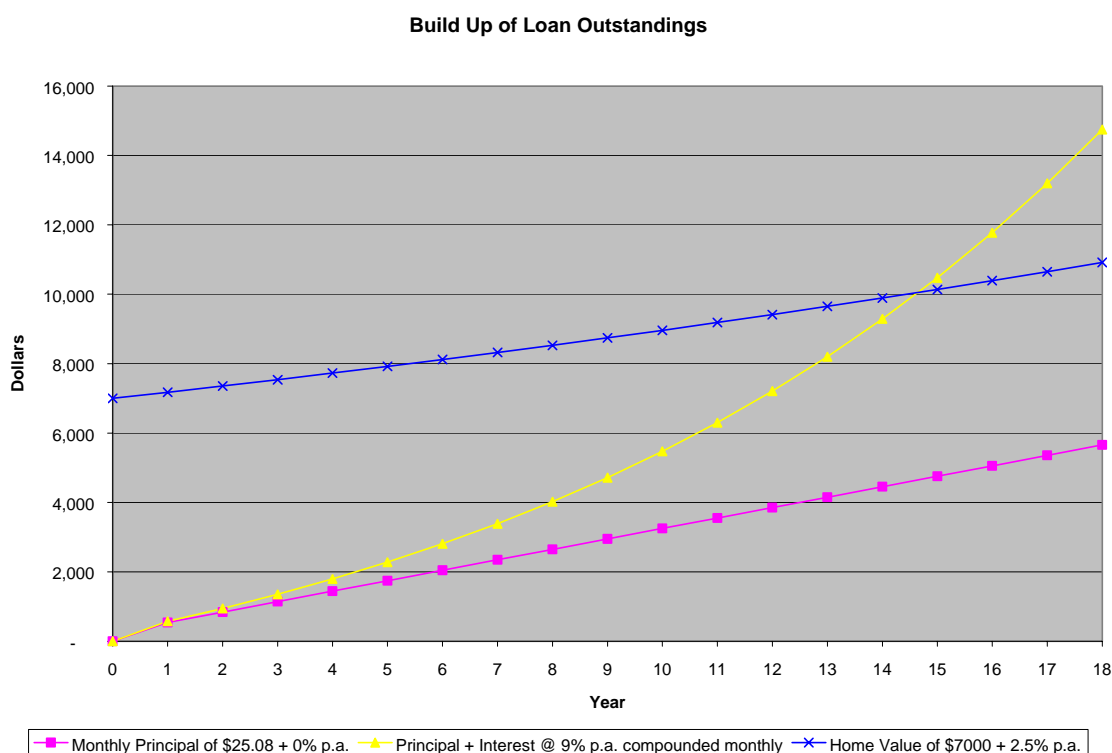
E. Adequate Demographic and Actuarial Data

Demographic information and actuarial data is supplied by Pragma in cooperation with the Kazakhstan Actuarial Center¹⁷. Sufficient demographic and mortality information was gathered to allow the models to project the maturity of the RMs per age group and the size of the monthly payments that could be made.

F. Predictable Interest Rate Levels

Property valuations and mortgage loans in Kazakhstan are denominated in US Dollars to avoid currency risk. Interest rates range from 14% to 19% depending on the maturity of the loan and the LTV ratio.

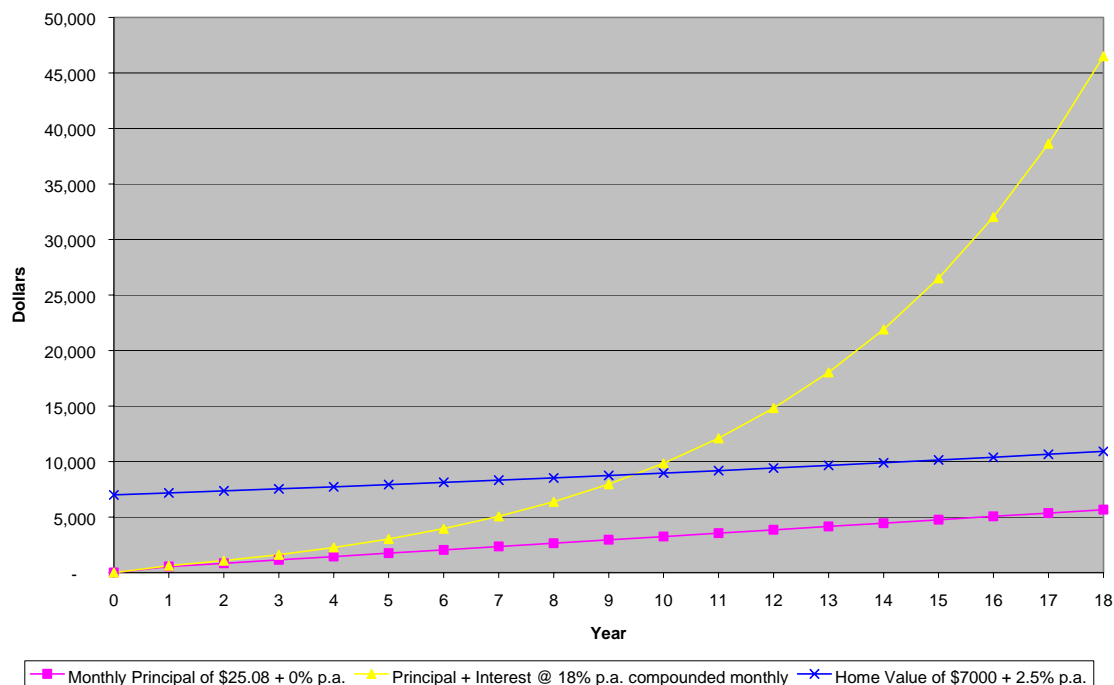
The viability of the reverse mortgage product is highly interest rate sensitive, as shown by the two graphs below – the first example assumes a mortgage lending rate of 9% p.a. interest compounded monthly, the second 18% p.a. In a reverse mortgage, the final sale of the property must cover the amount disbursed and the compounded interest that has accrued over the life of the loan. Thus the loan to value ratio must be low enough such that the sale of the property covers the disbursements, interest and other costs associated with the sale and maintenance of the property.



¹⁷ Dr. David Becker and Ms. Dina Mirgul. Ms. Mirgul is also director of the Kazakhstan Actuarial Center.

At a **9%** p.a. interest rate, the appreciation adjusted value of the residence (conservatively 2.5% per year) covers principal and accrued compounding interest out to the 14th year.¹⁸ This time frame is viable, given the average life expectancy of this age group (female over 65) of 12.3 years. However, at the current rates of **18%** p.a., with all other factors remaining unchanged, the graph changes considerably, with coverage only extending out 9 ½ years, inadequate to cover the anticipated life expectancy of 12.3 years.¹⁹

Build Up of Loan Outstandings



This comparison shows that reverse mortgage lending is rate sensitive and is not viable in high real interest rate environments. At current interest rates, reverse mortgage loans could only be made to individuals with an average remaining life expectancy of nine years, eliminating a large population of seniors. The simulation scenarios²⁰ are explained in more detail in Appendix B.

G. Legal Infrastructure

1. Impediments

The 6-month probate period after death before the court process confirming transfer of real estate ownership can start, coupled with the heirs' claims having legal priority over RM holders, remains a strong disincentive for the RM holder. The remedy would be for the inheritance laws to allow the mortgage holder to immediately liquidate the pledged property, with only the net value after sale transferred to the estate. Since changing this law would also help in further developing the standard mortgage market, this change might be possible under

¹⁸ The USAID model generates these graphs. The full parameters used in this scenario are shown in Appendix B.5.

¹⁹ Note that the property value and principal outstanding remain the same – but the vertical scale changes to reflect the impact of the higher interest cost.

²⁰ The model, explained in Section G, allows for the assumptions to be varied for testing sensitivity to change. It lists six progressive interest rate and longevity scenarios. These scenarios are for illustrative purposes and the assumptions can be varied.

the FPI's current Scope of Work.

One of the features of the land book style registration of liens is that the mortgage or lien is registered for a certain amount and in Kazakhstan also for certain period. Both of these requirements are impossible to determine at the moment of registration of a mortgage in the case of RMs (a growing debt obligation vs. a shrinking one with conventional mortgages). A creative solution is required to accommodate the RM structure. One suggestion would be for the mortgage to be registered for the maximum imaginable period, say until borrower is age 100, which might eliminate the need to re-register the property if the borrower lives past his/her actuarial life. It is also understood that upon exercising the mortgage rights and sale of the property the lender receives the smaller of a) the total amount of debt, b) the amount of registered mortgage or c) the proceeds from sale of the property. These and other legal uncertainties are examined in Appendix C and would have to be clarified and fully resolved prior to introduction of a reverse mortgage system.

2. Consumer Protection

Among the 17 pensioners surveyed, consumer protection from predatory lenders was the most important factor in participating in a RM program. With a regularly amortizing loan, borrowers are disbursed proceeds at the start of the loan and then he/she repays over time. Given positive spreads between the lending and funding rates there is no incentive for the lender to shorten the loan period, since the death of the borrower would allow the lender to recover no more than the unpaid principle and interest through liquidation of the asset. A reverse mortgage loan does not have a specific length, and the borrower's financial needs may continue long after the full value of the residence has been disbursed. This actuarial risk of having longer-lived borrowers may encourage private sector RM holders to collect the loans prematurely.

The optimal solution to ensure the public's trust and security in the RM is to extract the actuarial risk from the private sector RM holder by transferring it to a credible government institution, such as the city of Almaty, the KMC, or another government sponsored entity. Currently, the city of Almaty has a program whereby the elderly can swap their apartment for an assisted living facility supported by the City; however, this program has not been widely used.

H. Financial Viability Analysis

1. Financial Analysis Model

A simulation model was developed assess whether the potential target group would benefit from the program and whether it would be financially viable in Kazakhstan's environment.²¹ This model calculates the size of potential payments to the different age groups for different parameters including interest rates, property value and its expected appreciation, age statistics and mortality rates.

The model is based on the mortgage/lien structure in combination with a "default" guarantee. This guarantee assumes premiums equal to those applied in the US – 2% of the property value up-front and 0.5% of the outstanding loan amount annually. *Default risk* is being defined as an event when the proceeds from the sale of the property do not cover the full amount of the loan at its actual maturity. The model calculates the amount of monthly

²¹ Two models were developed, one by the WB consultant and the other by the USAID team. The WB consultant took an economic approach, while the USAID model used a banking approach measured in currency. Both were based on the same actuarial and market data, and produced essentially similar results.

disbursements to the elderly borrower in the specific age group wherein the discounted value of the received guarantee premiums would be equal to the expected losses at the age specific mortality rates (for more details see Appendix B).

Calculations are made in terms of percentages of the original property value and can be applied to any value of the property.

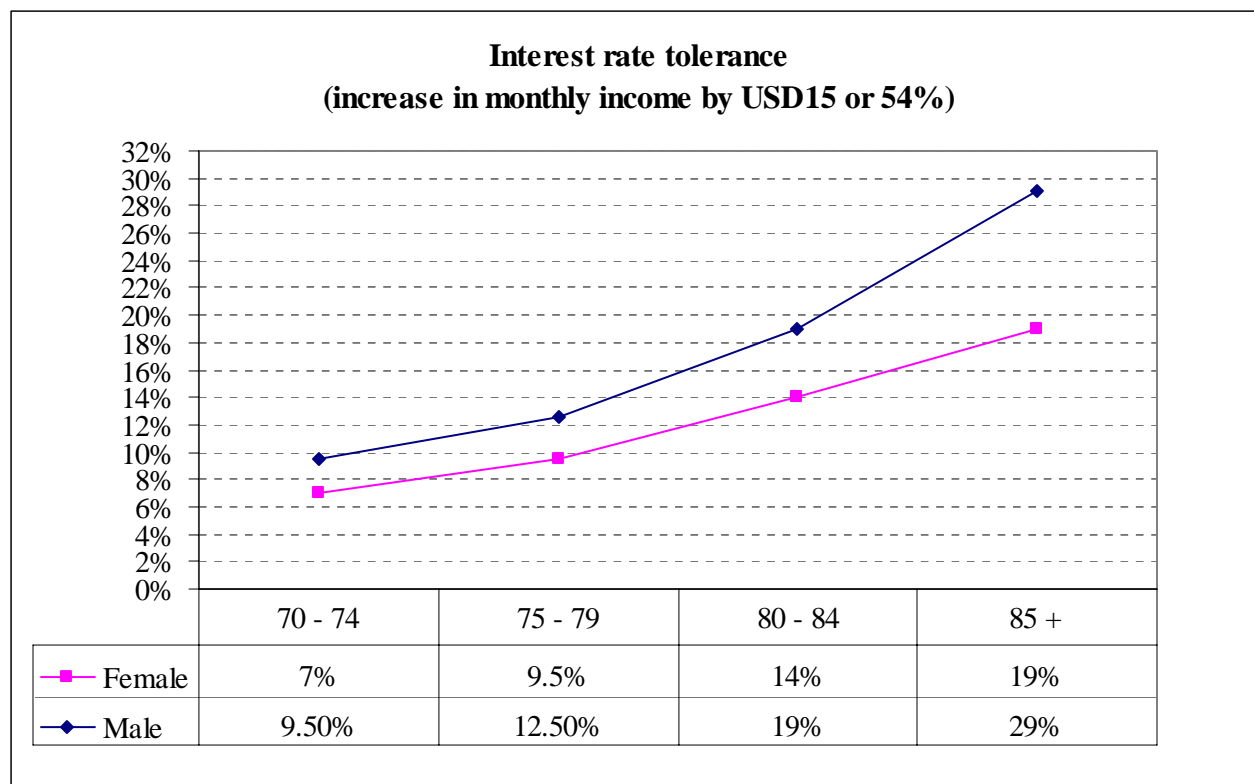
Payment to the elderly depends on many parameters – interest rates, value of the property and its expected appreciation and age specific mortality rates. The initial calculations indicate that the single most important parameter is the level of interest rates. At the current market interest rates in Kazakhstan of 18 – 20 percent and average property value of \$7,000 the program would have very limited benefit to the borrowers. At 18% interest rates females in the age group of 65 – 69 would be able to receive less than \$1 per month and those between 60 – 64 would not be able to participate in the program at all. As interest rates are lowered the benefit to the borrowers increase significantly. The following table illustrates relationship between interest rates and monthly payments (assuming property value of \$7,000 and annual appreciation of 2% up to 200% maximum during the lifetime of the loan) for males and females in 70 – 74 year old age group:

Interest rate	Males 70-74 \$ / month	Females 70-74 \$ / month
18%	5.5	2.3
15%	7.4	3.9
12%	11.1	6.8
9%	15.6	10.7

In order for financial institutions (FI) to find this product financially viable, and borrowers to find it economically appealing in Kazakhstan, interest rates must be low enough to cover the associated costs and to provide the borrower with a substantive increase (over 50%) in income. In order to satisfy an increase of 50% in income, the interest rate tolerance levels for each age group was evaluated assuming a \$15 minimum monthly income increase would be the lowest amount to benefit the borrowers.²² At the current monthly maximum pension of \$28 the increase would be slightly more than 50% increase in income.

The following graph illustrates this concept. For example, for a 70 – 74 year old female, to receive \$15 per month, assuming an average property value of \$7,000, interest rates should be 7 percent maximum and for a 70 – 74 year old male, the maximum interest rate should be 9.5 percent. Any higher interest rates result in less than \$15 a month loan disbursement. The graph also indicates that at current interest rates, only those older than 85 years would receive \$15.

²² Such assumption is based on the \$10/mnth cost. for utilities and maintenance fees plus \$5.00 more / month to equate to a roughly 50% increase in real income.



The higher the property value, the higher payment the borrower would receive and the higher would be interest rate tolerance level. For example, at a property value of \$14,000, a 70-year-old female would receive \$15 per month as long as interest rates are below 11% per annum (p.a.) compared with analysis above that reflects, at a property value \$7,000, rates must be at 7% p.a. or below. Similarly, expected appreciation in the real estate market would affect disbursement to the person. The following table illustrates the increase in disbursements to 70 – 74 year old males and females at 18 and 9 percent interest rates:

Annual and maximum property appreciation	18 percent interest rate		9 percent interest rate	
	Male	Female	Male	Female
2% and 200%	\$5.5	\$2.3	\$15.6	\$10.7
5% and 300%	\$8.5	\$4.1	\$25.7	\$17.4

However, property appreciation assumptions need to be realistic in order not to cause large and unexpected losses for the guarantor in the future, particularly since real estate is cyclical in the long term.

Other parameters are not manageable such as value of individual borrower's property, expected long-term performance of real estate market and mortality rates. Two parameters that can be managed are guarantee premiums and interest rates. **Guarantee premium subsidies** would be preferred over **interest rate subsidies** because premium subsidies would affect market terms to a lesser degree than direct interest rate subsidies.

Guarantee subsidies were simulated in the model using both high and low interest rates. The result was the loan disbursement, in absolute terms, was still insignificant and increased the monthly payout from \$0.93 to \$2.93. Concluding that subsidizing guarantee premiums would

not be the highest value-added intervention.

The results reflect that either the program should be postponed until market interest rates would decrease to financially viable levels or when some credit enhancement mechanisms could be applied to lower interest rates offered on reverse mortgage loans. While interest rate subsidies would not be recommended, costs and benefits for such subsidies should be weighed. In addition, it would provide an opportunity for the government to partner with the private sector to leverage assistance to the elder population.

For more simulation scenarios using different economic conditions, see Appendix B.

2. Limitation of the Model

The model does not take into consideration costs of foreclosure, i.e. costs association with sale of the property in default. The model also assumes static interest rates throughout the lifetime of the loan, which might not be the case in Kazakhstan. If RM loan calculations are made based on *projected* interest rates, those rates must be very conservative. If real interest rates turn out to be higher than projected, the probability of the loan balance exceeding the property value and, subsequently, causing losses for the lender, may be significantly increased. This is particularly true if property values are not appreciating at the same pace as interest rates. The model also assumes that the mortality of the specific pool of borrowers will be equal to that of the general population of Almaty.

VI. CONCLUSIONS

A reverse mortgage product that adequately protects homeowners will only become a viable product in the Kazakhstan financial market once lower interest rates are realized, the legal impediments are resolved and an acceptable guarantee mechanism is available to cover the actuarial/property risk. Implementation will also require establishment of guarantee facility to house actuarial risk, a broad marketing campaign and a counseling program for the potential borrowers.²³

The implementers for a RM scheme already exist in Almaty. Banks, mortgage brokers and real estate agents may originate the loans and sell them to the KMC that could fulfill the role as the holder of the RMs. A more detailed flow chart, showing the parties that would be involved and the anticipated roles of each is shown in Appendix E.

There are impediments to the launching of such product as noted above. Discussed below are the prerequisites for a RM pilot project to become financially viable and USAID/ Almaty's potential role. Presented are potential ways to satisfy these prerequisites by reducing interest rates on RM products, reducing the risks to the borrowers and holders of the product, and reducing the actuarial risk of the product.

A. Prerequisites

1. Reduced Interest Rates

Market interest rates for mortgage products offered in the Kazakh market are now too high to benefit a large population of elderly. Interest rates offered for reverse mortgages could be reduced by the following actions by the GOK:

- Exempt the interest on mortgage-backed securities from income tax and the related

²³ The cost of implementing the program with appropriate safeguards should be compared with the cost of simply paying pensioners additional cash without implementing a RM program.

withholdings for those participants originating and holding RMs. KMC says that it has introduced this idea to the parliament. USAID Almaty can help accelerate the acceptance of this idea in parliament.

- Encourage regulatory inclusion of mortgage-backed securities into the same asset class that fulfills the requirement that pension funds must hold 40% of their portfolio in Kazakh Government Securities. This step would make mortgage-backed securities an equally viable investment with Treasuries.²⁴ USAID Almaty's FPI includes the scope and the skill base to forward this concept toward formal acceptance.
- Ensure that in a mortgage backed security structure, clear title to the underlying mortgage assets is guaranteed, in case the issuer defaults. This action would likely lower the risk premium on the mortgage-backed securities and will also benefit the conventional mortgage backed security market.

USAID/Almaty potential role in reducing interest rates.

- Directly subsidize the interest rate for RM borrowers, possibly as a transitional intervention. This would be seen as a medium-term commitment from the Mission.
- Provide the technical assistance to the city of Almaty or KMC to structure a RM program so that the City designs and implements a RM product. This option is an institution building exercise, strengthening the knowledge and skill base of the counterpart(s), and has a greater potential of sustainability.
- Partner with other donor organizations that might be better suited to directly subsidize the interest rates for borrowers. USAID can then provide the technical assistance in the areas of project and product design, consumer education, GOK officials' education, and institution building among the KMC and the pension and life insurance companies.

2. Adding Credibility and Reducing Risks

- House the RMs with the KMC. As a government associated with the NBRK, the KMC will have a lower risk of failure so it should be able to issue mortgage backed securities at a lower interest rate. Placing the actuarial risk with an institution where the managers do not suffer a personal financial loss if payments to a borrower exceed the actuarial life expectancy also lowers the risk to the borrower.
- Provide technical assistance to the City or central government so that it can provide insurance or a guarantee to the RM holder to avert unseemly demise of the borrower either because of the value of the property or the extended life span of the borrower.
- Provide technical assistance for the design of the education materials for the borrower, lender and government officials.
- Assist in the strengthening of the existing distribution systems in place, either the Kazepost or the pension distribution centers. Either of these mechanisms could distribute the proceeds of the loans.
- Provide technical assistance so that the city of Almaty or central government can provide insurance or a guarantee against default of the lender with the objective that disbursements will be made as agreed despite lender default.

²⁴ Except for treatment under the Basle Agreement risk weighting of bank assets for capital adequacy purposes. Government treasury securities are be risk weighted at zero while mortgage backed securities generally would be rated at 50%.

B. Recommendations

The team recommends launching a Reverse Mortgage (RM) product targeted to benefit the elderly once the following market conditions exist:

1. Long term, US Dollar, mortgage lending rates in Kazakhstan drop below 10%.
2. Legal impediments stemming from the inheritance laws are eliminated. Current laws designed to protect the inheritance rights of heirs prevent lenders from immediately selling the collateral (property) from the RM to satisfy the accumulated debt of the elder homeowner.

Both of these issues are critical to the success of a reverse mortgage project. Eliminating legal impediments to RMs also fosters development of the conventional mortgage market. This and other legal issues are foci within the existing FPI project being managed by Pragma.

C. Next Steps include:

- Refine the legal infrastructure for conventional mortgages and mortgage backed securities to minimize the risk premium.
- Track interest rates and address the possibility of interest rate subsidies.
- Design a pilot program in Almaty to include the following, once the legal infrastructure is essentially refined and interest rates are lower:
 1. Structure the product design to mitigate the risks and accommodate the concerns identified during this assessment.
 2. Design a guarantee program that effectively deals with the actuarial and property value risks.
 3. Conduct a more comprehensive demand survey to structure the product to the needs of the elderly.
 4. Implement a borrower education component. This component is a key lesson learned from other RM programs and should be an integral part of a RM project.
 5. Actively involve the city of Almaty administration or central government in the program design.

D. Summary

USAID Almaty has an opportunity to launch a unique mortgage product, the reverse mortgage. The political willingness to introduce new financial products into the Kazakh market and the current systems in place, favorably positions this project for success. The team has provided the USAID Mission with a framework in which to design the product once interest rates are appropriate and the legal impediments are eliminated. With the increased interest in developing mortgage products throughout the Europe and Eurasian region, USAID Almaty is in a position to establish the model for this type of product as a natural extension of the existing FPI project.

The team thanks the USAID Mission staff and Pragma for their support in our efforts and welcomes any questions regarding the assessment information.

VII. APPENDICES

A. Comparative Reverse Mortgage Programs

1. Comparison Of Programs And Lessons Learned

Reverse mortgage may have originated as long as a century ago as isolated cases based on arrangements between individuals. Reverse mortgage programs in some standardized form on an institutional basis were first introduced in the US in the early sixties by municipalities. The programs were designed to provide funds for elderly people in their communities in order for them to carry out home improvements and pay property taxes. These loans were provided at zero percent interest.

In 1984 a specialized reverse mortgage institution was established in Canada – Canada Housing Investment Plan, which was followed by a reverse mortgage programs introduced by FHA in the US in 1986 and by Fannie Mae in 1990. Several private financial institutions also introduced this product in the US, but only one of them is still providing reverse mortgages today – Financial Freedom. Similar programs had been introduced in the UK, Australia and Russia. The Government of Latvia approved implementation of such a program in co-operation with the World Bank this spring.

Even though the experience of different countries with reverse mortgages is rather broad and promising, it is hard yet to draw conclusions in regards of the long-term viability of such an instrument because of the very long life cycle of reverse mortgage instruments. However, there are certain conclusions that can be drawn and lessons learned. There are indications that the reverse mortgage is potentially a financially viable product.

The key commonalities and differences of the programs are concentrating around the following key issues:

- Who assumes loan maturity risk (uncertainty of the time of the loan repayment);
- Who assumes “credit risk” (the risk that the loan amount may exceed the property value); and
- Who assumes the risk of lender (that lender’s contractual obligation towards the borrower of the reverse mortgage is fulfilled – who will continue payments to the elderly, if the lender ceases to exist either due to bankruptcy or any other reason)?

While these issues are very important to the supplier, they are even more so for the borrower. Trust and security are the most important parameters of the instrument for elderly borrowers; security that the borrower will not be forced out of the housing and that the borrower will reliably receive the monthly payments throughout their remaining life. The three risks must be assumed by institutions that are able and willing to responsibly undertake these risks.

Failure to optimally allocate these risks may lead to abuse of borrowers, as has been the case on some occasions. There has been some negative publicity in regards of reverse mortgages due to purposeful or non-purposeful misconduct by the lenders in terms of either

- Not fully explaining the nature and details of the transaction to the borrower, or
- Curtailing the risk of uncertainty of the borrower’s life span by forcefully and prematurely exercising of the mortgage rights on the pledged property.

Most of the above mentioned programs have public enhancements in which some or all of the risks are assumed by the central or municipal government. In the case of FHA and Fannie

Mae programs, 100 percent of all three risks – maturity²⁵, credit and lender's risk – are assumed by FHA and Fannie Mae respectively. In municipal programs such as that in Russia, the municipality operating the program assumes all risks. In other programs such guarantees have been provided implicitly by offering such programs through publicly owned entities.

In addition to addressing trust and security issues the following are two other important lessons are learned from other programs:

a) Importance of consumer protection

Objective counseling is essential to ensure that the borrower understands the details and characteristics of the transaction. This issue has been emphasized in the US through mandatory counseling of the borrower by FHA approved counselors as a loan condition. The counselor has to explain to the borrower not only the reverse mortgage but other options as well. In the US, impartiality is assured by providing such counseling for free – the FHA funds such counseling from the central government budget.

b) Importance of marketing

Marketing has proven to be very important for market penetration for reverse mortgage programs. Due to the characteristics of the transaction and the targeted audience, the decision making process by the borrower is rather lengthy and so is costly for the lender. Economies of scale are slow to reach so lenders are not motivated to actively market the product since other products tend to have a more immediate return on the investment. Lack of marketing has been quoted as an impediment to much broader development of the program in US. In Australia, the program was discontinued due to lack of demand²⁶.

These features and concerns are particularly important in transition economies due general popular mistrust not only of the private sector, but also of the government. Most transition economies have very limited experience in borrowing, particularly so among this program's target audience.

²⁵ Originators of reverse mortgage loans have right either to sell it at origination (under Fannie Mae program) or upon the loan balance reaching the initially appraised value of the property (FHA program).

²⁶ Recently there have been discussions about resuming it.

2. Country Comparisons

Country	Provided by	Basis	Public Guarantee	Funding Source	Type of Payment	Payout to Elderly	Restrictions on Use of Resources
USA – municipal	Municipalities	Lien	Full	Municipal budget	Up-front lump-sum, annuity, credit line	Based on the market value of the property, interest rates and age	Home improvements, property tax
USA – FHA	FHA through commercial banks	Lien	Full	Government budget	Up-front lump-sum, annuity, credit line	Based on the market value of the property, interest rates and age	No
USA – Fannie Mea	Fannie Mae through commercial banks	Lien	Full (implicitly)	Fannie Mea (recently – reverse mortgage bonds)	Up-front lump-sum, annuity, credit line	Based on the market value of the property, interest rates and age	No
USA – private	Private financial institution	Lien	No	Own funds		Based on the market value of the property, interest rates and age	No
Canada	Specialized reverse mortgage institution	Lien		Own funds	Up-front lump-sum, for which an annuity is bought	Based on the market value of the property, interest rates and age	
Russia	Municipal agency	Transfer of title	Full by municipality of Moscow	Municipal budget – 13% and own funds	Annuity / social housing	Based on the type of property (no evaluation)	No
Latvia ²⁷	Private commercial banks with government guarantee	Lien	Partial	Commercial banks from own funds	Up-front lump-sum, annuity	Based on market value of the property, interest rates and age	Home improvements ²⁸

²⁷ Recently approved, not operating yet.

²⁸ Including common areas in multi-apartment buildings.

B. Financial Analysis Models

1. Description of the Models

The models are based on the mortgage/lien structure of the transaction in combination with “default” guarantee provided at premiums equal to those applied in the US. Default risk is being defined as an event when the proceeds from the sale of the property do not cover the full amount of the loan at maturity. The model calculates the amount of monthly disbursements to the borrower within the specific age group in which the discounted value of the received guarantee premiums would be equal to the expected losses at age specific mortality rates

Calculations are made in terms of percentages of the original property value and, hence, can be applied to any value of the property.

2. Key Components of Financial Viability Models

The following parameters are used in the model for primary calculations that are carried out in terms of percentage of property value.

a) Market Value

The financial viability of RMs is also subject to the level of property values. Values over the last two years have been stable in the less desirable areas but increased by up to 40% in the better areas over the last two years. One-room apartment values in Almaty²⁹ range from as low as \$1,500 to well over \$20,000 depending on the area within Almaty (highest values are in the “golden triangle”.) For the feasibility analysis, we have assumed an average market value of \$7,000, consistent with the average value of a one-room apartment.

b) Property Appreciation

The models assume 2.5% p.a., half of the actual appreciation rate of 5% p.a. over the last two years. However, this assumption is only valid for Almaty and maybe three other cities where there is a shortage of one room apartments and growing real estate values. Annual property appreciation is assumed to be constant over the lifetime of the loan up to some set maximum

c) Interest Rates

Viability is highly interest rate sensitive, as discussed above, in the Evaluation Findings. Interest rates are set at the loan closing are assumed to be constant over the lifetime of the loan and interest is calculated as compounding on the outstanding loan balance.

d) Actuarial estimated remaining life for different age groups and gender

Mortality rates were provided by the Kazakhstan Actuarial Center through Pragma Corporation’s actuarial expert, Dr. Charles Becker. Age specific mortality rates for males and females in Almaty city. All actuarial data used reflects remaining life for the specific age group, not expected life from birth.

²⁹ The team’s discussions focused only on Almaty. Property values in Astana and Atirau are understood to have appreciated as well.

e) Transaction Costs

Each payment will incur a transaction cost. In the viability model, this estimate is \$0.50 cost per transaction. This amount is dependent on the transaction mechanism.

f) Maintenance and Property Insurance

Maintenance is calculated using \$10 per month for utilities and property maintenance. This figure was obtained through an informal survey of current homeowners and is a rough assessment of the expense incurred on behalf of the borrower. The monthly disbursement must cover the \$10 plus a cash amount that would incite the borrower to participate in the RM program. Homeowners' insurance is calculated using US FHA estimates.³⁰

g) Guarantees and reserves for expected losses

100% of the up-front guarantee fee and 40% of annual fee is used for accumulation of reserves for expected losses, while 60% of the annual guarantee premium is subtracted for administrative costs. Assessed risk free discount rate is used for discounting future expected losses and guarantee premium incomes³¹

h) Disbursements

The outstanding loan balance consists of payout to the borrower (cash and on the borrower's behalf), payment of the guarantee premium and interest accrued during the previous period. Payments to the borrower are constant over the lifetime of the loan and calculated in the form of percentage of the original property value

3. WB Model

The Model calculates size of annual and monthly payments to the different age groups at different parameters. Calculations are made for the following age groups: 60 – 64, 65 – 69, 70 – 74, 75 – 79, 80 – 84 and 85 + separately for males and females due to significant differences in mortality rates.

The following assumptions are used to calculate the monetary (US\$) results:

- property value – \$7,000
- monthly pension – \$28

Parameter	Case I	Case II	Case III	Case IV	Case V	Case VI
Discount rate	10%	10%	7%	7%	4%	4%
Loan interest rate	18%	18%	15%	15%	9%	9%
Annual property appreciation	2%	5%	2%	5%	2%	5%
Maximum property appreciation	200%	300%	200%	300%	200%	300%

³⁰ 2% of the property value up-front fee and 0.5% of outstanding loan amount per annum. It is assumed that insurance premium is paid from the loan amount and added to the payout to the elderly to avoid the situation that the net payout to the borrower is decreasing over time.

³¹ Risk free rate is used for discounting due to the fact that it is assumed that the guarantor would be required to invest excess funds in rather safe investment instruments such as deposits and government bonds.

MALES**60 - 64 year old male**

	Case I	Case II	Case III	Case IV	Case V	Case VI
Initial LTV	2.24%	4.33%	4.88%	8.00%	17.91%	27.39%
Monthly amount (US\$)	1.00	1.94	2.19	3.59	8.04	12.29
Increase in income (%)	3.59%	6.94%	7.83%	12.82%	28.70%	43.90%

65 - 69 year old male

	Case I	Case II	Case III	Case IV	Case V	Case VI
Initial LTV	4.74%	7.95%	7.40%	11.96%	19.35%	31.25%
Monthly amount (US\$)	2.77	4.64	4.32	6.98	11.29	18.23
Increase in income (%)	9.88%	16.57%	15.42%	24.93%	40.31%	65.11%

70 - 74 year old male

	Case I	Case II	Case III	Case IV	Case V	Case VI
Initial LTV	7.49%	11.71%	10.20%	16.26%	21.34%	35.18%
Monthly amount (US\$)	5.46	8.54	7.44	11.86	15.56	25.65
Increase in income (%)	19.52%	30.49%	26.57%	42.35%	55.57%	91.62%

75 - 79 year old male

	Case I	Case II	Case III	Case IV	Case V	Case VI
Initial LTV	9.89%	14.41%	12.42%	18.51%	21.96%	33.98%
Monthly amount (US\$)	9.61	14.01	12.08	17.99	21.35	33.04
Increase in income (%)	34.34%	50.02%	43.14%	64.27%	76.25%	117.99%

80 - 84 year old male

	Case I	Case II	Case III	Case IV	Case V	Case VI
Initial LTV	10.90%	14.85%	12.98%	17.94%	19.98%	28.60%
Monthly amount (US\$)	15.90	21.65	18.93	26.16	29.13	41.70
Increase in income (%)	56.78%	77.32%	67.60%	93.43%	104.04%	148.94%

85 + year old male

	Case I	Case II	Case III	Case IV	Case V	Case VI
Initial LTV	12.60%	16.20%	14.35%	18.79%	20.04%	26.78%
Monthly amount (US\$)	24.50	31.50	27.91	36.53	38.96	52.08
Increase in income (%)	87.50%	112.50%	99.67%	130.48%	139.14%	186.00%

FEMALES**60 - 64 year old female**

	Case I	Case II	Case III	Case IV	Case V	Case VI
Initial LTV	Not possible	0.04%	1.65%	3.80%	17.20%	25.32%
Monthly amount (US\$)		0.01	0.48	1.11	5.02	7.39
Increase in income (%)		0.04%	1.72%	3.96%	17.92%	26.38%

65 - 69 year old female

	Case I	Case II	Case III	Case IV	Case V	Case VI
Initial LTV	1.77%	4.05%	4.91%	8.38%	20.40%	31.39%
Monthly amount (US\$)	0.65	1.48	1.79	3.05	7.44	11.44
Increase in income (%)	2.30%	5.27%	6.39%	10.91%	26.57%	40.87%

70 - 74 year old female

	Case I	Case II	Case III	Case IV	Case V	Case VI
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Initial LTV	4.82%	8.40%	7.96%	13.15%	22.04%	35.83%
Monthly amount (US\$)	2.34	4.08	3.87	6.39	10.71	17.42
Increase in income (%)	8.37%	14.59%	13.82%	22.83%	38.26%	62.21%

75 - 79 year old female

	Case I	Case II	Case III	Case IV	Case V	Case VI
Initial LTV	7.96%	12.70%	11.05%	17.87%	23.49%	39.19%
Monthly amount (US\$)	5.16	8.23	7.16	11.58	15.22	25.40
Increase in income (%)	18.42%	29.40%	25.57%	41.36%	54.37%	90.72%

80 - 84 year old female

	Case I	Case II	Case III	Case IV	Case V	Case VI
Initial LTV	9.87%	14.49%	12.46%	18.69%	22.05%	34.21%
Monthly amount (US\$)	9.60	14.08	12.12	18.17	21.43	33.26
Increase in income (%)	34.28%	50.30%	43.28%	64.89%	76.55%	118.80%

85 + year old female

	Case I	Case II	Case III	Case IV	Case V	Case VI
Initial LTV	12.52%	17.10%	14.91%	20.69%	22.92%	32.72%
Monthly amount (US\$)	16.23	22.17	19.33	26.83	29.71	42.41
Increase in income (%)	57.96%	79.18%	69.05%	95.81%	106.12%	151.46%

4. WB Model Conclusions

Very preliminary financial calculations have been carried out to assess whether the program would be viable in Kazakhstan's environment. The model is based on the mortgage option in combination with a guarantee and the feasibility is determined based on the break-even point of discounted expected losses and discounted expected premium revenues. These calculations indicate that *the single most important parameter is the interest rate. At current market interest rates in Kazakhstan (18% p.a.) the program would have very limited benefit to the borrowers and would not be accessible to males below 70 for males or females below 74.*

Since the guarantee/insurance premium adds to the costs of the reverse mortgage, it was assessed whether government subsidies of these premiums would improve the situation. While the relative improvement was significant (monthly payout to the borrower increased by 300%), the payout in absolute terms was still insignificant and increased the payout from \$0.93 to \$2.93.

Performance of the real estate market is also a critical factor. Significant appreciation would increase the size of payments to the elderly. However, these assumptions need to be realistic in order not to cause large and unexpected losses for the guarantor in the future. Males below 75 would still be excluded from the program even with an annual property appreciation of 2% p.a. up to a cumulative maximum of 200%.

C. Legal and Tax Issues

- 1) The privatization program included protection for children by requiring that in any residence where children also live, then these children would inherit the property regardless of any liens that may exist at the time of the parent's death. Before the sale of an apartment, a certificate must be obtained from the Department of Social Welfare Trusteeship for Minors and the Disabled that this protection clause does not apply to the residence being sold, (no applicable children) and that the apartment may be sold or pledged to secure a loan. In principle, this provision only applies to the first sale after privatization, and does not apply to new construction. However, lenders' experience with inconsistent application of this provision (the limit to only the first sale is not always respected) has caused lenders to require the certificate in all instances. This broad application of legitimate protection of heirs is a significant impediment to mortgage lending.
- 2) The transfer of ownership of real estate (or any other asset) occurs only upon recording of sale in the land book. This registration process is understood to take some ten days – in the interim, a lien or other sale document may be in process that would take precedence. This processing delay eliminates certainty of sale unless the registration delay is reduced.³²
- 3) Past due taxes and utility payments may represent a legal claim on the property and take precedence over the sale.³³ A mechanism that allows immediate identification of such claims so that they can be liquidated during the closure of the sale is essential to transaction certainty.
- 4) Apartment owners are expected to make periodic payments to the municipality or private substitute to cover basic maintenance³⁴ of common grounds including stairwell, basement and roof. Since this responsibility is delegated, individual residents seem to take little or no responsibility for common areas, with visible effects. This uncertainty has apparently been addressed in Ust-Komenagorsk - homeowners associations have been formed that provide for contractual arrangements between apartment owners to maintain common areas. We understand that this initiative has resulted in a substantial improvement in the care and maintenance of common areas, followed by a significant improvement in the market value of the apartments involved in this cooperative initiative. This cooperation has only begun, but may soon become standard practice.
- 5) In principle, a lien or sale should take precedence over a will (testament), since an individual can only pass on assets that he or she actually owns. The practice may not always follow the principle.

³² This processing delay and market requirement for speedy execution to provide transaction certainty represents an ideal opportunity for rent seeking.

³³ Such past due obligations are a particular concern for reverse mortgages, since the homeowners are likely to have had difficulty meeting these obligations.

³⁴ Information on this issue seemed somewhat contradictory.

D. Potential Market

The following data are taken from Goskomstat mortality records and from the 1999 census by The Pragma Corporation project team.³⁵

Age groups	Almaty mortality 2000 Deaths per thousand pop		Astana mortality 2000 Deaths per thousand pop	
	Male	Female	Male	Female
0-4	4.05	3.60	4.39	4.04
5-9	0.33	0.31	0.44	0.18
10-14	0.47	0.22	0.38	0.08
15-19	2.24	0.35	1.77	0.54
20-24	3.83	0.85	4.45	1.16
25-29	5.37	1.10	4.36	1.45
30-34	5.22	1.21	6.17	2.91
35-39	7.32	1.93	7.95	1.84
40-44	9.58	2.61	9.14	4.05
45-49	13.58	4.14	11.75	4.54
50-54	17.12	7.01	17.71	6.21
55-59	26.20	10.94	28.02	11.33
60-64	39.81	15.12	37.49	15.39
65-69	62.01	25.33	54.22	22.21
70-74	82.88	39.15	71.97	36.68
75-79	107.79	66.01	110.98	62.80
80-84	166.14	110.88	165.39	89.25
85+	257.45	175.44	230.35	154.93

At the time of the 1999 census, the city of Almaty had some 385,758 households. Of these, 43,693 were one-person households in which the head was not working, and 28,679 were two-person households with no employed person. These numbers become 34,203 and 26,399 if households in which all members are recorded as unemployed or not fully employed are subtracted. Because some households with under-employed persons have been subtracted, the residual estimate of pension-aged households is likely to be a slight underestimate of the true number of such households. Corresponding numbers for Astana city were 5,581 one-person households and 5,778 two-person households.

Separate data indicate that there were 31,059 one-person households in which the head was age 60 or greater in Almaty (24,727 female-headed households, and 6,332 male-headed households). There were also 15,896 nuclear families consisting of two persons in which both members were 60 years old or more, 612 two-person extended family households in which both members were age 60+, and 97 *sostavniie domokhozyaistva* (households comprised of unrelated individuals) in this category, for a total of 16,605 two person households in which both members exceeded 60 years. Comparable figures for Astana city were 4,550 (one-person; 922 male and 3,638 female); 2,974 (two-person nuclear), 107 (two-

³⁵ Dr. Charles Becker, Ai-Gul Seitenova, & Dina Urzhumova of The Pragma Corporation, Financial Protection Initiative, Almaty, Kazakhstan (COP David Lucterhand).

person extended), and 35 (two-person unrelated), for a total of 3,116 two-person households in which both members were older than 60 years.

It is not possible to determine from published data the proportion of these households in separate apartments or houses. For the entire population (of all ages and types), the following proportions were found:

<u>Type of housing</u>	<u>percent of total (Almaty)</u>	<u>% of total (Astana)</u>
Individual homes	24.6	20.1
Part of individual homes	0.6	0.1
Separate apartments	68.3	69.3
General communal apartments	0.4	0.4
Communal dwellings (<i>obshchezhtiia</i>)	6.1	10.1

In short, it seems likely that 90-95% of elderly persons living alone or with one other elderly person were in homes or separate apartments. The vast majority of these were owner-occupied, although age-specific rates are not available. For the population as a whole, 89.9% of Almaty households and 83.5% of Astana households were in owner-occupied housing.

The numbers also do not report elderly households that also contain minors, in part because it is unclear whether such housing will be bequeathed to those minors.

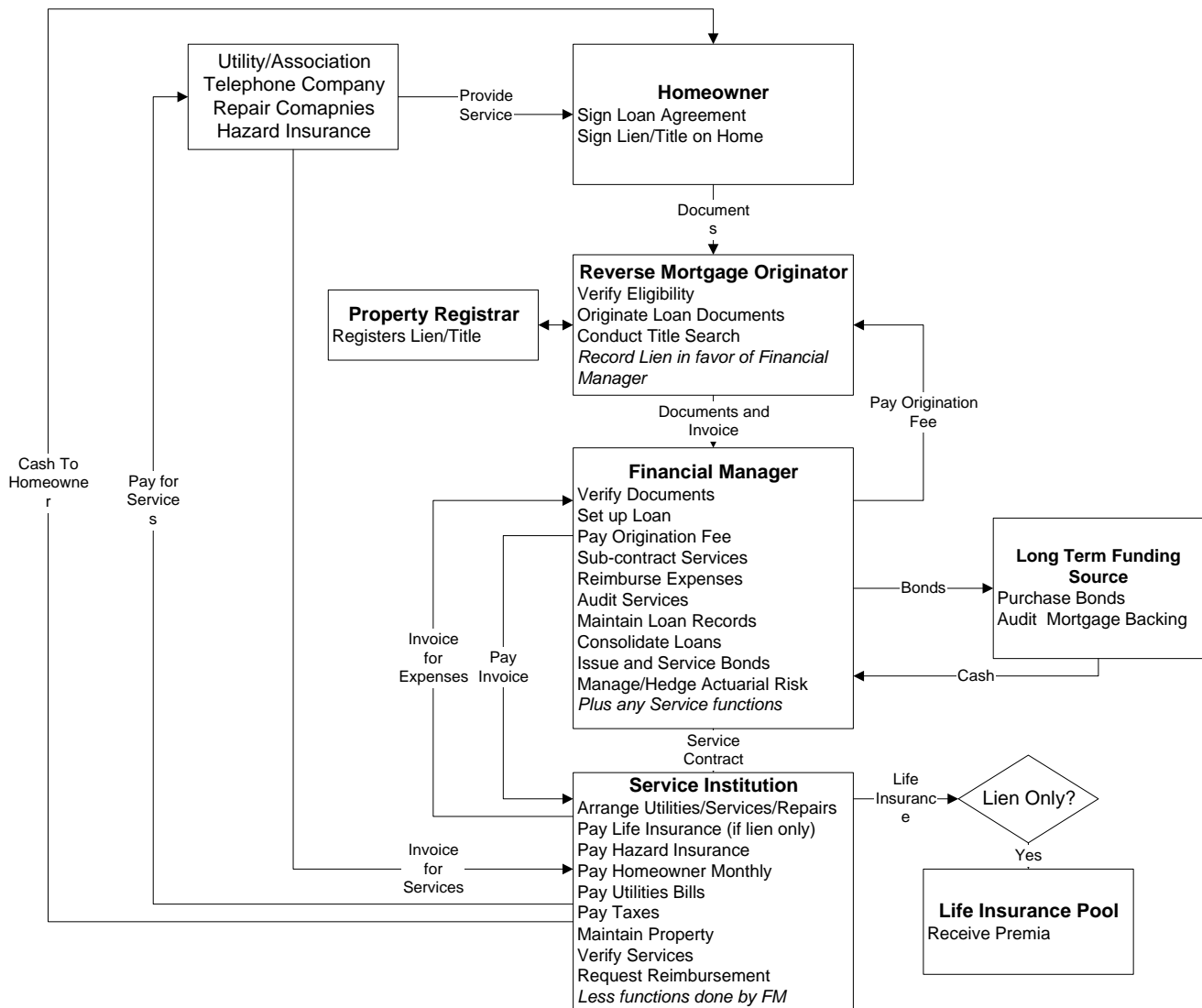
Rough estimates of potential reverse-mortgage market size:³⁶

Almaty	45,000	to 62,000 households
Astana	7,000	to 12,000 households

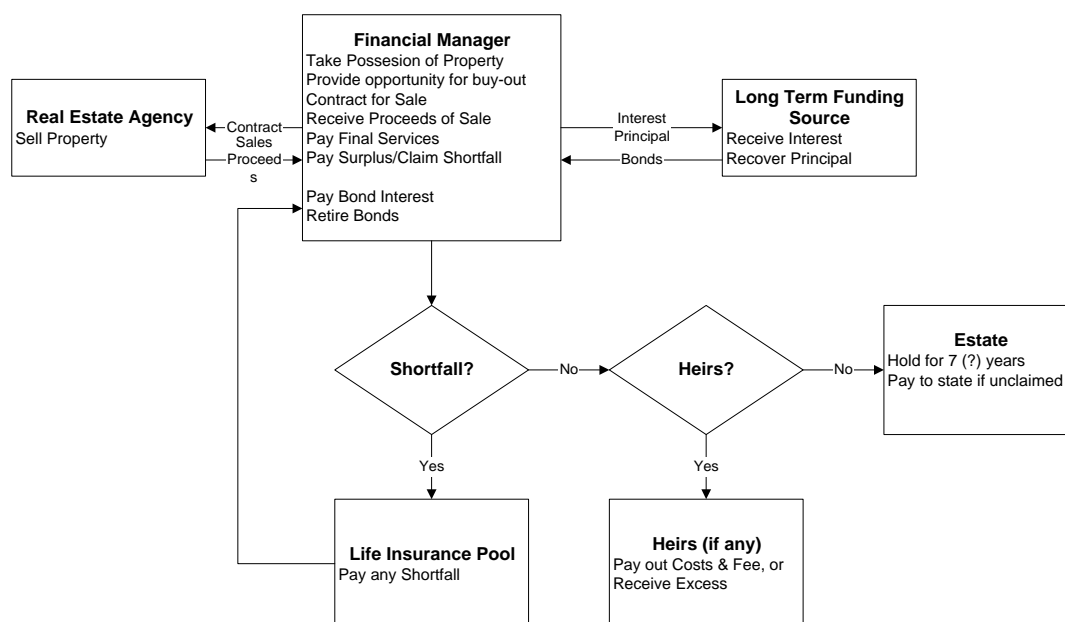
³⁶ Please note that these are stocks rather than flows. The stock is likely to stay constant or shrink in the coming 5 years because of small additions caused by small retirement-aged cohort sizes (as the generation currently retiring was born between 1939 and 1944).

E. Flow Chart of Conceptual Framework – Full

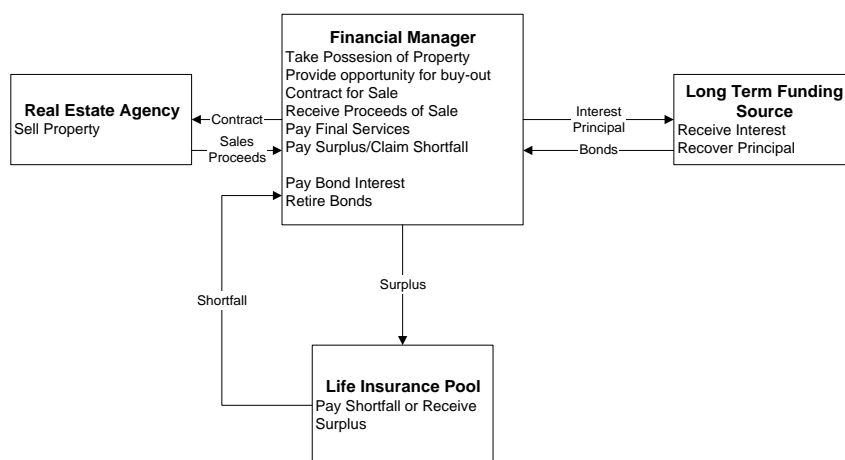
Reverse Mortgage Setup and Outflow



Reverse Mortgage Reflow - Lien



Reverse Mortgage Reflow - Sale



F. Discussion Partners

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